

## **CLAIMS**

What is claimed is:

1. An enterprise control system for use in an environment for producing semiconductor-related product, the system comprising:

a first mechanism for maintaining an exchange of information between a primary provider and a secondary provider, the information pertaining to the semiconductor-related product;

a second mechanism for collecting the exchanged information;

a third mechanism for collecting event information upon an occurrence of a predetermined event element associated with the semiconductor-related product; and

a fourth mechanism for providing the collected exchanged information and the collected event information to a customer associated with the semiconductor-related product.

2. The system of claim 1 further comprising:

a fifth mechanism for assigning the predetermined event element to the semiconductor-related product at the secondary provider.

3. The system of claim 1 wherein the first mechanism uses a first network for exchanging information between the primary and secondary providers, and the fourth mechanism uses a second network, different from the first network.

4. The system of claim 3 wherein the first mechanism uses a dedicated bi-directional path of the first network, and wherein the second mechanism is for continuously collecting the exchanged information.

5. The system of claim 1 wherein the fourth mechanism is an enterprise control system that includes a customer interface in the form of a web browser.

6. A method of business-to-business exchange between providers in a semiconductor manufacturing environment, the method comprising:
  - exchanging a product from a primary provider to a secondary provider;
  - transmitting information associated with the product throughout a virtual fab, wherein the transmission of information occurs continuously and multi-directionally between the providers through the virtual fab;
  - storing at least a portion of the transmitted information; and
  - providing the portion of the transmitted information to a customer in response to a customer request.
7. The method of claim 6 wherein the primary provider is a semiconductor fab and the product is a lot of semiconductor wafers.
8. The method of claim 7 further comprising:
  - assigning event elements to the product through the virtual fab;
9. The method of claim 8 wherein the event elements include process completion at a predetermined check point.
10. The method of claim 8 wherein the event elements of the primary provider and the secondary provider comprise product process steps, the event elements track the product through the virtual fab.
11. The method of claim 7 wherein the information includes product lot identification and product lot history.
12. The method of claim 7, wherein the step of providing uses a service system interface for communicating between a computer system associated with the customer and a computer system associated with the semiconductor fab.

13. A system of business-to-business exchange between entities in a semiconductor manufacturing environment, the system comprising:
  - a product with exchangeable information interposing a primary provider and a secondary provider;
  - a plurality of event elements assigned to the product through a virtual fab; and
  - an enterprise control entity adapted for the exchange of information associated with the product through the virtual fab, the enterprise control entity being adapted to provide multi-directional information manipulation throughout the virtual fab.
14. The system of claim 13 wherein the primary provider is a semiconductor fab facility.
15. The system of claim 13 wherein the secondary provider is a sub-contractor.
16. The system of claim 13 wherein the primary provider is a semiconductor design house.
17. The system of claim 13 wherein the secondary provider is a equipment vendor.
18. The system of claim 13 wherein the event elements of the primary provider and secondary provider comprise product process steps, the event elements track the product through the virtual fab.
19. The system of claim 18 wherein the event elements include manufacturing process checkpoints.
20. The system of claim 13 wherein at least one of the entities is a service system interface for communicating between a computer system associated with a customer and a computer system associated with the semiconductor fab.

21. A software program stored on a recordable medium, the software program being used for tracking and managing a plurality product and information through a semiconductor manufacturing environment, the software program comprising:

instructions for establishing a virtual fab with a plurality of entities, each entity associated with an internal process to a semiconductor fab or an external process to the semiconductor fab;

instructions for a plurality of event elements for tracking the product through the plurality of entities of the virtual fab;

instructions for a communications interface for interacting with a enterprise control entity and the plurality of event elements;

instructions for determining a future location for the product and the associated information through the virtual fab via the enterprise control entity; and

instructions for amending the associated information to the recordable medium through the virtual fab.

22. The software program of claim 21 wherein the plurality of entities include:

at least one entity associated with a primary provider manufacturing executing system in the virtual fab;

at least one entity associated with a secondary provider manufacturing executing system in the virtual fab;

at least one entity associated with a manufacturer of the semiconductor equipment vendor;

at least one entity associated with a manufacturer of the sub-contractor;

at least one entity associated with a manufacturer of the semiconductor design house;

at least one entity associated with a customer of products being manufactured by the semiconductor fab; and

at least one entity associated with engineering support for the either or both of the primary and second manufacturing executing system.